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ABSTRACT

Because it incorporates many of the best practices of inservice education, the use of computer/video linkage for inservice education programs in small rural schools holds great promise for improving both the method of delivery and the content of professional development activities. Studies of staff in small rural schools consistently find dissatisfaction regarding inservice programs, yet a strong need exists for such teachers to have multiple teaching fields. Computer assisted instruction (CAI) success in meeting staff development needs is well documented, and the sustained growth of microcomputers in schools strongly supports capitalizing on the development of inservice CAI modules. A potentially ideal method of providing inservice opportunities utilizes a new technology that will advance the learner one step closer to actual "hands-on" instruction. Through the use of a video controller, a microcomputer can be linked with a video cassette recorder (VCR), thus combining the interactive and immediate feedback advantages of the computer with the realism of a video tape player. The Computer Assisted Special Education Training for Small Schools project (CASETSS) at Texas Tech University will use Texas Instruments' Video Controller and Authoring system for the purpose of developing and delivering inservice special education programs to school districts. (BRR)

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VCR MICROCOMPUTER TEACHING/INSERVICE

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Presently, there exists a new, renewed interest in the needs of small and rural schools. The Small Schools Project at the National Rural Center has just completed a massive statistical profile of small schools and is in the process of completing a set of case studies on small, rural schools (Dunne, 1981). The Educational Resources Information Center (ERIC) has established a Clearing House on Rural Education and Small Schools (CRESS). Additionally, the National Center for Smaller Schools at Texas Tech University has surveyed the needs of the smaller schools across the nation. Among the various areas of need identified by small school teachers and administrators, eleven of the top twelve items require professional development assistance.

However, since the Conant Report (1959) recommending consolidation of smaller schools, the major emphasis of educational research and development efforts has been on the improvement of educational programs and practices of the larger, urban, and consolidated schools. As late as 1978, Muse reports that no more than six universities in the nation offered courses that might be of any prospective value specifically to rural teachers.

Most universities fail to consider data detailing the number of small school districts when developing new courses or evaluating the content of existing courses. In 1981, small school districts with enrollments of less than 200 students comprised nearly 3/4 of the total number of districts in the nation and serve nearly 20% of the students (Horn, 1981). There were 6099 schools and school districts with fewer than 500 students each, comprising 36% of the nations total (Dunne, 1981).

Many rural high school students are forced to choose from a dwindling number of course offerings that do not meet their personal goals or the entrance requirements of universities. If several students express an interest in a particular course offering, locating teachers with the necessary skills and expertise for the specialized courses creates a problem. Any viable solution to teacher inservice training and professional development is hindered by the remoteness of rural communities which limits the opportunities of staff at universities, libraries, and regional service centers.

Dunne (1981) found a general dissatisfaction among the teachers in small rural schools regarding their current inservice programs; 40% of the teachers in her survey said that the school does a poor job with staff development programs and less than 30% said that the local educational

agency does a good job.

It is imperative that a design for inservice education for teachers and administrators adhere to the best practices found in previous successful inservice programs for small, rural schools. Burdin (1973) found that effective programs serve large numbers of remotely based teachers at their home site. Hall, et al. (1969) note similar findings and cite the need to serve the teachers in their own setting through the use of various types of mobile units and itinerant learning faciliatators. Wood, et al. (1980) emphasized that adults learn best through concrete experiences presented in an individualized mode.

Also well documented is the success of computer assisted instruction (CAI) in meeting staff development needs. The CAI Lab at Penn State University conducted extensive research of the application of CAI to inservice education of teachers in remote settings. These participants who received the computer assisted training consistently scored significantly higher in achievement, needed less instruction time, and preferred the method of delivery over that given the participants in the control groups (conventional, teacher-directed instruction).

Other projects have been successful in improving the quality of delivery by adding audio messages, slides and hand-drawn graphics with the basic programmed print

(Vitello et al. 1972).

The sustained growth of microcomputers in schools strongly supports capitalizing on the technology proposed for the development of inservice computer assisted instruction (CAI) modules. A study by Market Data Research revealed that 42% of the school districts in the country already have at least one microcomputer and that in the five year period from 1980-1985, there will be a 300% increase in the number of districts with micros. Their data further revealed that even small school districts under 1200 average daily membership (ADM) are reported to have micros in nearly 30% of the districts.

A potentially ideal method of providing inservice opportunities that adhering to the best practices of inservice training utilizes a new technology that will advance the learner one step closer to actual "hands-on" instruction. Through the use of a video controller, a microcomputer can be linked with a video cassette recorder (VCR), thus combining the interactive and immediate feedback advantages of the computer with the realism of a video tape player.

By coupling a video controller with the Course Designer Authoring Package available from Texas Instruments Incorporated, a teacher or administrator can become a course designer and create/update training lessons without

any programming knowledge. This authoring package allows the course designer to create a lesson by building a sequence of teaching segments called modules. A single module can have any combination of three parts - a video segment, a computer segment, and a speech segment. By using these segments in various combinations, the course designer can create both traditional computer-assisted instruction and innovative interactive video instruction. Through interactive selection lists and on-screen prompts, the package guides the course designer step-by-step in entering the lesson content into the computer. The Course Designer Authoring Package also :

1. enables the course designer to use two types of branching: immediate branching based on the student's last response or cumulative branching based on a percentage of correct responses,

2. offers a variety of computer text formats: text only, true/false, multiple choice, and fill-in-the-blank,

3. gives the option of selective judging with the multiple-choice format, i.e., some choices can be judged right or wrong while other choices need not be judged at all,

4. allows records to be kept on a diskette and/or with a printer,

5. prints a copy of a lesson's contents for review,

6. allows the course designer to review videodisc segments (including single frames on a videodisc) while designing the training course,

7. gives the advantage of virtually unlimited synthesized speech by using TI's text-to-speech technology, and

8. automatically creates a custom lesson that can be

stored on an audiocassette, a diskette, or the audio dub track of a compatible videotape recorder.

The Computer Assisted Special Education Training for Small Schools project (CASETSS) located at Texas Tech University will use the Video Controller and Authoring system for the purpose of developing and delivering inservice special education programs to school districts. Individualized lessons, originally produced in text form for use in special education training programs for regular classroom teachers, are being expanded and adapted at this time for immediate dissemination to rural schools. CASETSS also proposes to nationally disseminate the results of this exciting innovation in professional development through publications and presentations at professional conferences.

Because it incorporates many of the best practices of inservice education in small, rural schools, the use of the computer/video linkage for inservice education programs holds great promise for improving both the method of delivery and the content of professional development activities.

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